

## STEERING DIODE ARRAY

## APPLICATIONS

- ✓ USB Interface Ports
- ✓ Cellular Phones
- ✓ Video
- ✓ Handheld Electronics
- ✓ Personal Computers

## IEC COMPATIBILITY (EN61000-4)

- ✓ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- ✓ 61000-4-4 (EFT): 40A - 5/50ns

## FEATURES

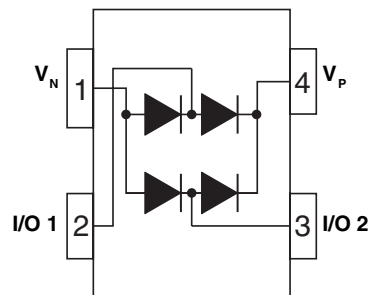
- ✓ ESD Protection > 40 kilovolts
- ✓ 225 Milliwatt Continuous Power Dissipation
- ✓ Provides Two (2) Lines of Protection
- ✓ Low Leakage Current < 1.0 $\mu$ A
- ✓ Ultra Low Capacitance: 3pF Typical
- ✓ RoHS Compliant in Lead-Free Versions

## MECHANICAL CHARACTERISTICS

- ✓ Molded JEDEC SOT-143
- ✓ Weight 9 milligrams (Approximate)
- ✓ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
- ✓ Solder Reflow Temperature:
  - Tin-Lead - Sn/Pb, 85/15: 240-245°C
  - Pure-Tin - Sn, 100: 260-270°C
- ✓ Flammability Rating UL 94V-0
- ✓ 8mm Tape and Reel Per EIA Standard 481
- ✓ Marking: Marking Code



## PIN CONFIGURATION



## DEVICE CHARACTERISTICS

### MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_J$	-55°C to 150°C	°C
Storage Temperature	$T_{STG}$	-55°C to 150°C	°C
Continuous Power Dissipation	$P_{PC}$	225	mW
Repetitive Peak Forward Current @ $t_p = 5\mu s$ , $F = 50kHz$ (Pin 2-3)	$I_{FRM}$	700	mA

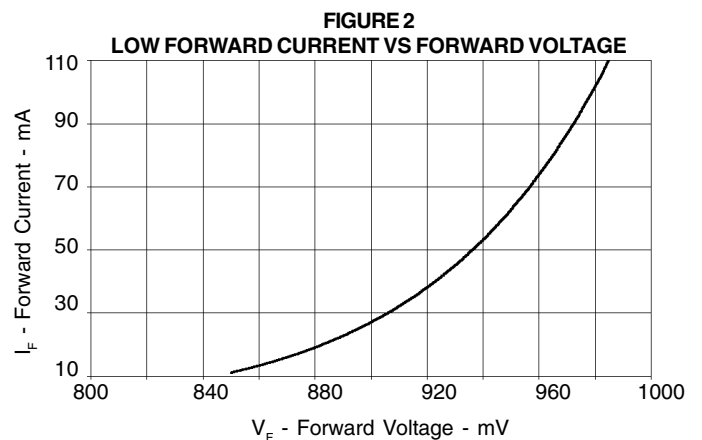
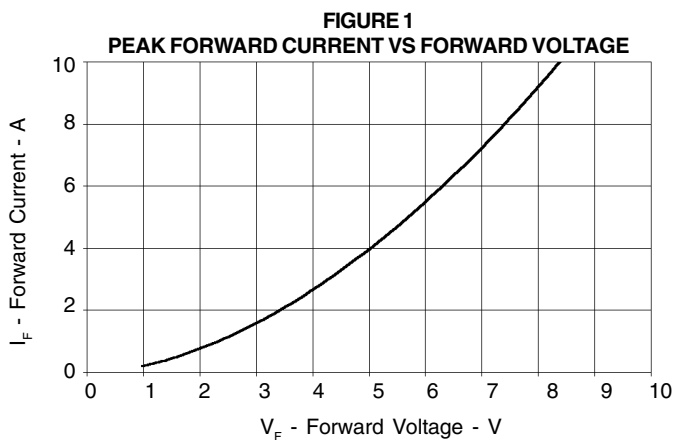
### ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING CODE	REPETITIVE PEAK REVERSE VOLTAGE (See Note 1) @ 10 $\mu A$ $V_{RRM}$ VOLTS	MAXIMUM REVERSE LEAKAGE CURRENT (See Note 2) $V_{RRM}$ @ 5V $I_R$ $\mu A$	MAXIMUM DIODE FORWARD VOLTAGE @ 20mA $V_F$ VOLTS	MAXIMUM CAPACITANCE (See Note 3) $C_i$ pF
USB004	PSA	20	1	0.95	6

**Note 1:**  $V_p - V_N = 20V$ .

**Note 2:**  $V_p - V_N = 5.5V$ .

**Note 3:** Between Line and Ground -  $V_p = 5V$ ,  $f = 1MHz$ ,  $V_{IO} = 2.5V$ ,  $V_N = 0V$ .



## SOT-143 PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE		SOT-143			
PACKAGE DIMENSIONS					
DIM	MILLIMETERS		INCHES		
	MIN	MAX	MIN	MAX	
A	2.80	3.04	0.110	0.120	
B	1.20	1.39	0.047	0.055	
C	0.84	1.14	0.033	0.045	
D	0.39	0.50	0.015	0.020	
F	0.79	0.93	0.031	0.037	
G	1.78	2.03	0.070	0.080	
H	0.013	0.10	0.0005	0.004	
J	0.08	0.15	0.003	0.006	
K	0.46	0.60	0.018	0.024	
L	0.445	0.60	0.0175	0.024	
R	0.72	0.83	0.028	0.033	
S	2.11	2.48	0.083	0.098	

MOUNTING PAD				NOTES
TYPICAL				
DIM	Millimeters	Inches		
1	2.85	0.112		
2	2.00	0.079		
3	1.80	0.071		
4	1.90	0.075		
5	1.05	0.041		
6	2.75	0.108		
7	1.20	0.047		
8	0.80	0.031		
9	0.85	0.033		
10	0.85	0.033		
11	0.85	0.033		

TAPES					TAPES				TAPES							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2.85	2.00	1.80	1.90	1.05	2.75	1.20	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
0.112	0.079	0.071	0.075	0.041	0.108	0.047	0.031	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033

**NOTES**

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Dimensions are exclusive of mold flash and metal burrs.

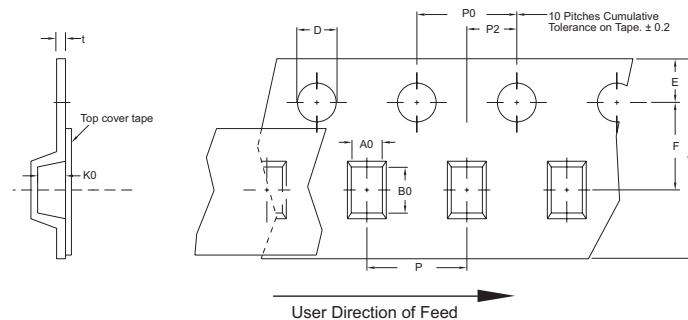
**TAPE & REEL ORDERING NOMENCLATURE**

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix-T7 = 7 Inch Reel - 3,000 pieces per 8mm tape, i.e., *USB004-T7*.
3. Suffix-T13 = 13 Inch Reel - 10,000 pieces per 8mm tape, i.e., *USB004-T13*.
4. Suffix -LF = Lead-Free, Pure-Tin Plating, i.e., *USB004-LF-T7*.

**Outline & Dimensions: Rev 2 - 6/06, 06011**

### Tape & Reel Specifications (Dimensions in millimeters)

Reel Dia.	Tape Width	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.10 ± 0.10	2.70 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25



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